การรับรู้ผลสัมฤทธิ์ในการรักษาโรคติดเชื้อทางเดินหายใจส่วนบนและอุจจาระร่วงเฉียบพลัน ของผู้ป่วย ณ หน่วยบริการปฐมภูมิ

Patients' Perception towards Treatment Efficacy of Upper Respiratory Infection and Acute Diarrhea in Primary Care Units

นิพนธ์ต้นฉบับ

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Original Article

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บทคัดย่อ

วัตถุประสงค์: เพื่อประเมินผลสัมฤทธิ์ในการรักษาโรคติดเชื้อทางเดินหายใจ (Upper Respiratory Infection; URI) และอุจจาระร่วงเฉียบพลัน (Acute Diarrhea; AD) ตามการรับรู้ของประชาชนที่มารับบริการ ณ หน่วยบริการปฐมภูมิในเขตอำเภอเมือง จังหวัดฉะเชิงเทรา **วิธีการศึกษา:** การวิจัยเชิงสำรวจโดยใช้แบบสอบถามกลุ่มตัวอย่างของผู้ที่มารับการรักษา URI จำนวน 65 คน และ AD จำนวน 61 คน ใช้ค่าสถิติเชิงพรรณนา และการทดสอบไคสแควร์ ที่ระดับความเชื่อมั่น 95% ในการวิเคราะห์ข้อมูล **ผลการศึกษา:**ผู้ป่วย URI และ AD ที่มารับบริการรักษา ณ หน่วยบริการปฐมภูมิ รับรู้ว่าตนเองมีอาการดีขึ้นถึงหายเป็นปกติจากอาการเจ็บคอและถ่ายเหลวโดยไม่ได้รับยาปฏิชีวนะร้อยละ 86.0 และ 96.0 และการที่ผู้ป่วยปฏิบัติตนได้ถูกต้องตามคำแนะนำมีความสัมพันธ์กับการรับรู้ว่าตนเองหายหรือดีขึ้นจากอาการเจ็บคอและมีเสมหะจาก URI (*P*-value = < 0.001 สำหรับทั้งสองอาการ) และอาการอ่อนเพลียจาก AD (*P*-value = 0.010) อย่างมีนัยสำคัญทางสถิติ ผู้ป่วยมีความพึงพอใจในการรับบริการในภาพรวมในระดับดีมากถึงมากที่สุดร้อยละ 79.4และจะกลับมารับบริการ ณ หน่วยบริการปฐมภูมิเดิมหากมีอาการ URI และ AD อีกร้อยละ 88.9 **สรุป:** ผู้มารับบริการรักษา URI และ AD ส่วนใหญ่รับรู้ว่าตนเองมีอาการดีขึ้นถึงหายเป็นปกติแม้ไม่ได้รับยาปฏิชีวนะ มีความพึงพอในการรับการรักษาทั้งสองโรคอยู่ในระดับสูง และเลือกที่จะกลับมารับบริการ ณ หน่วยบริการปฐมภูมิเดิมอีก บุคลากรทางการแพทย์ควรให้คำแนะนำในการปฏิบัติตนอย่างถูกต้องแก่ผู้ป่วยและรักษาคุณภาพการบริการอย่างต่อเนื่อง

คำสำคัญ: การรับรู้, ผลสัมฤทธิ์ของการรักษา,โรคติดเชื้อทางเดินหายใจส่วนบน, อุจจาระร่วงเฉียบพลัน, หน่วยบริการปฐมภูมิ

Abstract

Objective: To assess treatment efficacy of upper respiratory infection (URI) and acute diarrhea (AD) regarding patients' perception at primary care units (PCUs) of Muang district, Chachoengsao province. **Method:** This survey research was performed using self-administered questionnaire for 65 URI- and 61 AD patients. Collected data were analyzed using descriptive statistics and chi- square test. Significant difference was assumed at a confidence interval of 95%. **Results:** The proportions of patients noven given antibiotics and felt better or recover from sore throat and diarrhea were 86.0% and 96.0%, respectively. Compliance to self-care advice during URI or AD episode was significantly correlated with perceived efficacy of being cured and better combined for sore throat, and cough/phlegm for URI (*P*- value < 0.001 for both) and weakness for AD (*P*- value = 0.010). The proportion of URI and AD patients with highly and highest satisfaction combined was 79.4%. Most decided to return for treatment for future URI or AD episodes, if any (88.9%). **Conclusion:** Most patients with URI and AD without the use of antibiotics reported cured or getting better. They were highly satisfied with the treatment and would return to the same PCUs for the future similar illness. Healthcare providers should provide information for self-care and maintain care quality.

Keywords: patients' perception, treatment efficacy, upper respiratory infection, acute diarrhea

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Introduction

Microbial antibiotic resistance has been a major public health problem worldwide.[1] Especially in Thailand, since the problem has been increasing, the Ministry of Public Health issued the Rational Drug Use (RDU) to promote appropriate use of drugs[2], and the management for antimicrobial resistance (AMR) since the fiscal year of 2016 – 2017 to promote responsible use of antibiotics (RUA) both at hospital and primary care unit levels.[3] In the operation of RUA, four outcome indicators at the hospital and two at the primary care settings were set. Based on these indicators, sub-district health promoting hospitals and community health centers were expected to have a 20% rate or lower of antibiotics use for both upper respiratory infection (URI) and acute diarrhea (AD).[2]

Chachoengsao is one of the provinces with a success in RUA operation on URI and AD. All primary care settings (i.e., sub-district health promoting hospitals and community health centers) in the province had an antibiotics use of less than

20% (100% or all of 122 settings) since the second trimester of the fiscal year of 2018.[4] Specifically, it was found that, in the whole province, antibiotic prescribing rate for URI and AD dropped from 30.3% and 69.8%, respectively in the first trimester of the fiscal year of 2017 to 6.05% and 6.69%, respectively, at the end of the fiscal year of 2018 (March 31, 2018).[4] In the Muang district of Chachoengsao province, all of the 23 primary care settings met such outcome criteria with antibiotic prescribing rate for URI and AD dropping from 33.8% and 45.2%, respectively in the first trimester of the fiscal year of 2017 to 5.9% and 6.1%, respectively, at the end of the fiscal year of 2018 (September 30, 2018).[4]

The success of appropriate antibiotics use in primary care settings was evident by prescribing patterns for URI and AD. However, perception of the patients on the efficiency of antibiotics treatment could be a determinant of the sustainable success in accordance with the evidence-based medicine available. The perceived efficacy of antibiotics use for URI and AD should be better understood. With no such understanding, this study aimed to determine the patient's perception on efficacy of URI and AD treatments at the primary care settings in Muang district, Chachoengsao province. In addition, we aimed to determine factors affecting the perceived efficacy including satisfaction and practice after such perception. The findings could be an evidence of the treatment efficacy as reflected by the patients in addition to the outcome indicators as indicated by the policy. This kind outcome could suggest the satisfaction and therapeutic options for future illnesses.[5-7] Findings could also be used for future improvement to prevent and relieve the problems of microbial antibiotics resistance in Chachoengsao province.

Methods

This survey study was a part of a research to determine efficacy of treatment for URI and AD in primary care settings in Muang district, Chachoengsao province.[8] The research was approved by the Ethics Committee on Human Study of Buddhasothorn Hospital (approval number: BSH- IRB 015/2561; date: October 27, 2018).

In this study, study population was patients with upper respiratory tract infection (URI) or acute diarrhea (AD). URI patients were referred to those presenting with symptoms of sore throat, fever, nasal congestion/mucus, sneezing, runny nose, cough, phlegm, body ache, and weakness. AD patients were those with loose stool three or more times per day or at least one time of watery stool, regardless of stomachache, nausea/vomiting, fever or weakness.

The study population was from all 23 primary care settings in Muang district, Chachoengsao province consisting of all 21 sub-district health promoting hospitals and two community health centers. To be eligible, the patients had to have URI or AD diagnosed as stated in the electronic database system (HOSxP^{TM}) in one of these 23 settings during January to February, 2019. They had to be 15 to 65 years of age, have residence in Muang district of Chachoengsao province, and be able to communicate in Thai. However, those with serious health problems, being unable to provide information, or moving out of the Muang district residence during data collection period were excluded from the study.

This report was a sub-group analysis specifically in Muang district of the research project on the primary care settings in the whole province of Chachoengsao. With a study population of 151,936 URI patients and 14,211 AD patients in the whoe province, a precision of 95%, and type I error of 5%, a sample of 480 and 384 patients with URI and AD, respectively was required based on Yamane's estimation. With a study population of 653 URI patients and 576 AD patients in Muang district, a quota sample of 65 and 61 patients with URI and AD, respectively was required.

Study instruments

Data collection tool was a questionnaire consisting of four parts. The first part asked for demographic information of the participants. In the second part, history of URI or AD, and the treatment at the primary care setting of the illness. The third part asked about the perception of the participant on the treatment efficacy for each of the symtpoms whether it was cured, better, no change, worse, not sure, or no symptom since the start. The symptoms included Sore throat, cough and/or phlegm, nasal mucus, fever and headache for URI, and watery stool, stomachache, nausea/vomiting, fever, and weakness for AD. Last, the practice of the patient after knowling that they were getting, staying the same or worse after the care inluced seeking no more treatment only self-care at home, or more medications were sought. Satisfaction toward the the treatment results were also asked with available responses ranging from highest satisfied to highly not satisfied. In addition, participants were asked what they would do if any future episode of URI or AD. The responses could be either seeking treatment at the same sub-district health promoting hospital, or at community hospital, or private clinic, or self-medicating or seeking no treatment but self-care only.

The questionnaire was tested for content validity with three experts. The whole questionnaire had an acceptable content validity with a content validity index of 1.00.

Data collection

The participants were asked for permission and informed about the study objectives and conduct. The participation was voluntary in nature. Once permitted by the participant, written informed consent was obtained. The questionnaire was self-administered.

Data analysis

Demographic and clinical status characteristics were presented as descriptive statistics including frequency with percentage and mean with standard deviation. Relationships between categorical variables were tested using chi-square test or Fisher's exact test, as appropriate. Statistical significance for all statistical analyses were set at a type I error of 5% (or *P*-value < 0.05). All statistical analyses were conducted using software PASW SPSS (version 20, SPSS Inc.).

Results

Of the 126 participants, 65 and 61 patients with URI and AD, respectively, the majority was women (71.4%), with 31 – 50 years of age (42.9%), Buddhist (91.3%), married (62.7%), with elementary to junior high school education (59.5%), workers in agriculture and general labor (51.6%), and with a monthly income of less than 15,000 baht/month (76.9%) (Table 1).

Experiences in upper respiratory tract infection (URI) and acute diarrhea (AD) and treatment available at the sub-district health promoting hospitals

The majority of participants received health care at the neighboring sub-district health promoting hospitals (89.7%) and/or public community hospitals (21.4%) (Table 2). Most of them (90.5%) received information regarding treatment of URI and AD, specifically from providers at the sub-district health promoting hospitals, and physicians and pharmacists at the community hospitals (85.7%). The participants received illness history taking (92.1%), physical examinations (68.6%), and advice for self-care during URI and AD (98.6%). Most of them received 1 to 4 medications (98.5%) of which 70.8% were herbal Thai traditional medicines, specifically andrographis capsule for URI (70.8%) and Learng Pid Samud for AD (21.3%). Antibiotics were given in small proportions of participants, 16.9% and 6.6% for URI and AD, respectively. Most participants complied with the treatment regimen where 93.7% took complete course of antibiotics and 78.6% followed the advice on self-care (Table 2).

Table 1 Demographic characteristics of the participants with upper respiratory tract infection (URI) and acute diarrhea (AD) (N = 126).

Characteristics	Number (%)					
	URI (n = 65)		AD (n = 61)		Total (N = 126)	
Gender						
Men	18	(27.7)	18	(29.5)	36	(28.6)
Women	47	(72.3)	43	(70.5)	90	(71.43)
Age (yrs.)						
15 – 20	4	(6.2)	9	(14.8)	13	(10.3)
21 – 30	9	(13.8)	9	(14.8)	18	(14.3)
31 – 40	9	(13.8)	14	(23.0)	23	(18.3)
41 – 50	17	(26.2)	14	(23.0)	31	(24.6)
51 – 60	21	(32.3)	9	(14.8)	30	(23.8)
61 – 65	5	(7.7)	6	(9.8)	11	(8.7)
Religion						
Buddhism	62	(95.4)	53	(86.9)	115	(91.3)
Islam	3	(4.6)	8	(13.1)	11	(8.7)
Christian	–		–		–	
Marital status						
Single	14	(21.5)	19	(31.1)	33	(26.2)
Married	44	(67.7)	35	(57.4)	79	(62.7)
Widowed	5	(7.7)	4	(6.6)	9	(7.1)
Divorced/separated	2	(3.1)	3	(4.9)	5	(4.0)
Education level						
No formal education	1	(1.5)	2	(3.3)	3	(2.4)
Lower than elementary school	2	(3.1)	1	(1.6)	3	(2.4)
Elementary school	34	(52.3)	16	(26.2)	50	(39.7)
Junior high school	13	(20.0)	12	(19.7)	25	(19.8)
Senior high school	6	(9.2)	17	(27.9)	23	(18.3)
Vocational school diploma	2	(3.1)	–		2	(1.6)
High vocational school diploma/associate degree	3	(4.6)	3	(4.9)	6	(4.8)
Bachelor's degree	4	(6.2)	9	(14.8)	13	(10.3)
Higher than Bachelor's degree	–		1	(1.6)	1	(1.6)
Occupation						
Student	5	(7.7)	4	(6.6)	9	(7.1)
Government or government enterprise employee	3	(4.6)	2	(3.3)	5	(4.0)
Local administration office employee	4	(6.2)	1	(1.6)	5	(4.0)
Private company employee	5	(7.7)	15	(24.6)	20	(15.9)
Small business owner	7	(10.8)	7	(11.5)	14	(11.1)
Workers in agriculture/general labors	39	(60.0)	26	(42.6)	65	(51.6)
Others	2	(3.0)	6	(9.8)	8	8 (6.3)
Monthly income (Baht)						
No income	8	(12.3)	7	(11.5)	15	(11.9)
Less than 10,000	30	(46.2)	19	(31.1)	49	(38.9)
10,000 – 15,000	21	(32.3)	27	(44.3)	48	(38.1)
15,001 – 20,000	6	(9.2)	3	(4.9)	9	(7.1)
20,001 – 25,000	–		3	(4.9)	3	(2.4)
more than 25,000	–		2	(3.3)	2	(1.6)

Perceived efficacy on the treatment of upper respiratory tract infection (URI) and acute diarrhea (AD)

After the care service, most of the participants not receiving antibiotics perceived that their symptoms were better and cured combined, specifically 86.0% and 96.0% for those with URI and AD, respectively (Table 3).

Table 2 Experiences in upper respiratory tract infection (URI) and acute diarrhea (AD) and treatment available at the sub-district health promoting hospitals (N = 126).

History and clinical status	Number of participants (%)		
	URI (n = 65)	AD (n = 61)	Total (n = 126)
1) Where did the participant get healthcare service mostly when ill. (more than 1 option applicable)			
Sub-district health promoting hospital close to the residence	59 (90.8)	54 (88.5)	113 (89.7)
Private clinic	17 (26.2)	10 (16.4)	27 (21.4)
Hospital	9 (13.8)	18 (29.5)	27 (21.4)
Community pharmacy	12 (18.5)	5 (8.2)	17 (13.5)
Grocery stores where medications available	3 (4.6)	–	3 (2.4)
2) Has the participant received information about the treatment of URI or AD?			
Yes	62 (95.4)	52 (85.2)	114 (90.5)
No	3 (4.6)	9 (14.8)	12 (9.5)
3) If receiving the information about the treatment of URI or AD, where did the participant get the information? (more than 1 option applicable)			
Leaflet	16 (24.6)	18 (29.5)	34 (27.0)
Poster	13 (20.0)	12 (19.7)	25 (19.8)
Television	31 (47.7)	26 (32.8)	57 (45.2)
Radio	6 (9.2)	3 (4.9)	9 (7.14)
Online media, eg. Facebook™ and Line™	19 (29.2)	19 (31.1)	38 (30.2)
Websites			
Physician and pharmacist at the hospital	15 (23.1)	14 (23.0)	29 (23.0)
Providers at sub-district health promoting hospital	43 (66.2)	36 (59.0)	79 (62.7)
Relatives, neighbors, and acquaintance	14 (21.5)	9 (14.8)	23 (18.3)
Others (eg. Public health volunteers)	4 (6.1)	1 (1.6)	5 (4.0)
4) What kind of service did the participant receive at the sub-district health promoting hospital in your community? (more than 1 option applicable)			
History taking	62 (95.4)	54 (88.5)	116 (92.1)
Physical examination	51 (78.5)	35 (57.4)	86 (68.3)
Prescriptions (more than 1 medication applicable)			
Medications for URI			
Antipyretics	49 (75.4)	–	–
Nasal congestion / running nose	47 (72.3)	–	–
Antitussives / mucolytics	44 (67.7)	–	–
Antibiotics capsules	11 (16.9)	–	–
Andrographis capsules	46 (70.8)	–	–
Medications for AD			
Antispasmodics	–	29 (47.5)	–
Oral rehydration salts	–	57 (93.4)	–
Antiemetics	–	17 (27.9)	–
Antibiotics capsules	–	4 (6.6)	–
Antipyretics	–	7 (11.5)	–
Learng Pid Samud (an herbal Thai traditional medicine for diarrhea)	–	13 (21.3)	–
Advice for self-care practice (more than 1 medication applicable)			
Advice for URI			
Adequate rest	48 (73.8)	–	–
Avoid cold water and ice; drink more lukewarm or room-temperature water	46 (70.8)	–	–
Use face mask	47 (72.3)	–	–
Keep distance from others and children to avoid contagion	22 (33.8)	–	–
No advice	–	–	–
Advice for AD			
Take soft diet	–	46 (75.4)	–
Take oral rehydration salt	–	56 (91.8)	–
No advice	–	2 (3.3)	–
Compliance to treatment regimen			
Medication taking as advised			
Complete antibiotics course	60 (92.3)	58 (95.1)	118 (93.7)
Did not complete antibiotics course	4 (6.2)	3 (4.9)	7 (5.6)
Did not take antibiotics at all	1 (1.5)	–	1 (0.8)
Self-care as advised			
Complete self-care as advised	48 (73.8)	51 (83.6)	99 (78.6)
Incomplete self-care	7 (10.8)	4 (6.6)	11 (8.7)
No self-cared as advised at all	10 (15.4)	6 (9.8)	16 (12.7)

Table 3 Perceived efficacy of the treatment for upper respiratory tract infection (URI) and acute diarrhea (AD) among participants *NOT* receiving antibiotics (N = 111).

Symptoms	Number (%) of participants by perceived treatment efficacy					
	Cured	Better	No change	Worse	Not sure	No symptom since the start
1. URI (n = 54)						
Sore throat	12 (22.2)	25 (46.3)	4 (7.4)	1 (1.9)	1 (1.9)	11 (20.4)
Cough and/or phlegm	13 (24.1)	20 (37.0)	4 (7.4)	2 (3.7)	–	15 (27.8)
Nasal mucus	18 (33.3)	20 (37.0)	2 (3.8)	–	–	14 (25.9)
Fever, headache	20 (37.0)	16 (29.6)	2 (3.8)	–	–	16 (29.6)
2. AD (n = 57)						
Watery stool	18 (31.6)	30 (52.6)	1 (1.8)	–	1 (1.8)	7 (12.2)
Stomachache	20 (35.1)	24 (42.1)	–	–	–	13 (22.8)
Nausea/vomiting	18 (31.6)	16 (28.1)	–	–	–	23 (40.3)
Fever	18 (31.6)	13 (22.8)	–	–	–	26 (45.6)
Weakness	22 (38.6)	21 (36.8)	2 (3.5)	–	–	12 (21.1)

In terms of associations between perceived efficacy of the treatment for upper respiratory tract infection (URI) and acute diarrhea (AD) and compliance to self-care advice among participants not receiving antibiotics, among patients with perfect compliance, 90.62% of them reported being cured or better combined for their sore throat; while 36.36% of those with imperfect compliance reported such perceived efficacy (*P*-value < 0.001) (Table 4). Similar proportions (90.62% and 36.36%) were also found for cough and/or phlegm in patients with perfect and imperfect compliance, respectively (*P*-value < 0.001). For watery stool which was a symptom of acute diarrhea, 89.58% of the patients with perfect compliance and 55.56% of those with imperfect compliance reported the cure and being better (*P*-value = 0.010) (Table 4).

Table 4 Associations between perceived efficacy of the treatment for upper respiratory tract infection (URI) and acute diarrhea (AD) and compliance to self-care advice among participants *NOT* receiving antibiotics (N = 111).

	Perceived efficacy		*P*-value*
	Cured + better	No change + worse + not sure + no symptom since the start	
Sore throat (N = 54)	n = 37	n = 17	
Perfect compliance (n = 32)	29 (90.62%)	3 (9.38%)	< 0.001
Imperfect compliance (n = 22)	8 (36.36%)	14 (63.64%)	
Cough and/or phlegm (N = 54)	n = 33	n = 21	
Perfect compliance (n = 32)	29 (90.62%)	3 (9.38%)	< 0.001
Imperfect compliance (n = 22)	4 (18.18%)	18 (81.82%)	
Watery stool (N = 57)	n = 48	n = 9	
Perfect compliance (n = 48)	43 (89.58%)	5 (10.42%)	0.010
Imperfect compliance (n = 9)	5 (55.56%)	4 (44.44%)	

* Chi-square test.

Participants' practice after knowing the treatment result for URI and AD

Once they knew about their treatment results, the majority of participants did not seek further care but self-cared at home (65.1%) (Table 5). Most participants reported that they were highest

and highly satisfied with the care (79.4%). In addition, for the future illness of URI or AD if any, the majority of them would return to the same sub-district health promoting hospital for treatment (88.9%).

Table 5 Practice of the participants after knowing the treatment result for upper respiratory tract infection (URI) and acute diarrhea (AD) (N = 126).

ข้อมูลผู้ป่วย	Number of participants (%)		
	URI (n = 65)	AD (n = 61)	Total (n = 126)
1. What did you do once getting better, staying the same, or worse, after the care?			
Since cured, no more treatment was sought but self-cared at home.	41 (63.1)	41 (67.2)	82 (65.1)
Since better but not cured, no more treatment was sought but self-cared at home.	15 (23.1)	12 (19.7)	27 (21.4)
More medications for treatment was sought (more than 1 option was applicable)	9 (13.8)	8 (13.1)	17 (13.5)
At the same sub-district health promoting hospital	8 (12.3)	6 (9.8)	14 (11.1)
At community hospital	4 (6.2)	1 (1.6)	5 (4.0)
At community pharmacy (drugstore)	3 (4.6)	–	3 (2.4)
Private medical clinic	2 (3.1)	1 (1.6)	3 (2.4)
2. Satisfaction toward treatment results for URI and AD			
Highest satisfied	18 (27.7)	17 (27.9)	35 (27.8)
Highly satisfied	32 (49.2)	33 (54.1)	65 (51.6)
Moderately satisfied	15 (23.1)	11 (18.0)	26 (20.6)
Not satisfied	–	–	–
Highly not satisfied	–	–	–
3. For the future episode of URI or AD, what would you do? (more than 1 option was applicable)			
Seek treatment and medications at the same sub-district health promoting hospital	59 (90.8)	53 (86.9)	112 (88.9)
See physician at the community hospital	11 (16.9)	16 (26.2)	27 (21.43)
See physician at private medical clinic	7 (10.8)	8 (13.1)	15 (11.9)
Self-medicate with medications from community pharmacy (drugstore)	8 (12.3)	6 (9.8)	14 (11.1)
Seek no further treatment, just self-care at home	3 (4.6)	1 (1.6)	4 (3.8)

Discussions and Conclusion

In our present study, the efficacy of treatment for upper respiratory tract infection (URI) and acute diarrhea (AD) as perceived by the patients was determined. The focus on URI and AD was because the two ailments are among the most ones found in the community. With the definition of perception as the expression of thought, understanding or interpretation of the sensation of the body to the stimuli. The expression and interpretation is moderated by the person's experience.[6,7] Brook and colleagues found the perception on illness and realization on health status were related to health behavior.[7] They could also influence treatment compliance, future treatment, self-care behavior if the illness recurred.

In our study, perceived efficacy on the treatment for the two illnesses could help reflect the perception of the patients receiving care at these primary care settings. The patient's response to the treatment result could help lead the way for improving healthcare service for the two diseases.

Our study found that most patients receiving care for URI and AD at primary care settings in Muang district of Chachoengsao province were not treated with antibiotics (16.9% in URI and 6.9% in AD). This finding was consistent with the national routine report of the primary care settings where 20% or lower of the patients received antibiotics for URI and AD since the second trimester of the fiscal year of 2018.[5]

The finding that 86.0% and 96.0% of patients with URI and AD, respectively, perceived that symptoms were better or even cured was consistent with previous studies suggesting the two illnesses could be cured without the use of antibiotics. Spinks and colleagues[5] summarized two studies with 3,621 and 2,974 patients comparing outcomes of treating sore throat at days 3 and 7 by antibiotics and placebo. They found no statistical difference between antibiotics and placebo.

The practice of no antibiotics for URI and AD has been indicated by the Rational Drug Use service plan (RDU) advocating that the two illnesses could be cured by natural immune system. For AD, RDU suggests that it could be cured within 1 – 3 days with no use of antibiotics since severity and length could not be improved by antibiotics. On the other hand, antibiotics could adversely retain the causative bacteria such as *Samonella* to stay longer in the instestine. Based on RDU, the use of antibiotics in URI and AD is irrational.

A few studys indicated efficacy of herbal Thai traditional medicines such as Andrographis for URI[10,11] and Learng Pid Samud for AD.[12,13] Panossian and colleagues performed a systematic review and found that clinical research in Europe and Asia confirmed the efficacy of the two remedies for URI and AD.[11] [10] In addition, 12.Thamlikitkul and co-workers compared Andrographis (6 gm per day) with the combination of paracetamol and Andrographis (3 gm per day).[11] They found that Andrographis (6 gm per day) offered a better relief of fever and sore throat. Furthermore, the RDU in primary care advoicates the use of Andrographis for certain patients with URI.[14] Andrographis is in the National List of Essential Medicins for a relief of symptoms of cold such sore throat and muscle ache.[15]

For Learng Pid Samud (LPS) recipe, Sireeratawong and colleagues found that LPS could significantly reduce the stool

volume among diarrhea-induced rats when compared with controls.[12] With the dose of 5,000 gm per day, no toxicity was found among the rats. However, our present study did not test the efficacy of the two traditional remedies in URI and AD, only the improvememt in symptoms by the two remedies was reported by the participants.

In addition, we found that the practice of self-care as advised by healthcare providers for URI and AD was associated with perceived efficacy of better or cured symptoms of sore throat and weakness from acute diarrhea. This finding was consistent with previous studies on sore throat[14] and acute diarrhea.[16] The practice of self-care in our study was consistent with the guideline for the care of the two diseases[14,16], where more fluid intake, face mask, and more frequent handwash are recommended for treating cold or URI and preventing its spread. [14] It is also recommended to take more oral rehydration salt solution (ORS) for acute diarrhea.[14] With evidence from our and previous studies, patients were more likely to perceive that URI and AD could be cured with appropriate self-care without the use of antibiotcis.

For services rendered to the patients, they were illness history taking, physical examinations, medication prescribing both conventional and traditional medicines, and advice for self-care for URI and AD. The findings reflected quality healthcare service as indicated by the primary care standards.[16] In addition, the perceived efficacy on the treatment results as better or cured from the two diseases as well as the service provided could influence the patient's satisfaction on the given primary healthcare settings. As a result, they preferred to return for service if any future illness or URI or AD. However, no association between perceived efficacy (cured or better symptoms) and demographic characteroistics or satisfaction on the service was found.

In conclusion, most patients receiving care at primary care settings in Muang district of Chachoengsao for upper respiratory tract infection and acute diarrhea perceived that their symptoms were better or cured withour the use of antibiotics. Compliance on self-care as advised during the illness influenced the perceived efficacy on treatment results of cured or better symptoms of sore throat and loose stool. Most patients were satisfied with the treatment of the two diseases at the high and highest level. They also decided to return to the same primary care setting for the treatment of future upper respiratory tract infection and aciute diarrhea if any. Healthcare providers responsible for such service should therefore continuously maintain service quality including providing drug information and self-care practice. Such effort could lead to a sustainable practice of responsible antibiotics use in the province of Chachoengsao which could alleviate the problem of microbial antibiotic resistance.

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References

1. Ministry of Public Health, Ministry of Agriculture and Cooperatives, National Health Commission Office, et al. Current situation of antimicrobial resistance. Strategic Plan of Thailand antimicrobial resistance management 2017—2020. Bangkok. 1. Ministry of Public Health, Ministry of Agriculture and Cooperatives, 2017: p.15. (in Thai)
2. Office of the Permanent Secretary, Bureau of Health Administration. Service Plan: Rational Drug Use. Nonthaburi. Ministry of Public Health, 2016: pp.1—15. (in Thai)
3. Thumlikitkul V. Antimicrobial Resistance Indicators: Thailand AMR Containment and Prevention Program. Bangkok. Thai Health Promotion Foundation, Health System Research Institute, APEIR Asia Partnership on Emerging Infectious Disease Research, 2015: p.105.
4. Chachoengsao Provincial Health Office. Chachoengsao RDU service plan outcomes. Chaochoengsao. Chachoengsao Provincial Health Office, 2017: pp.22-24. (in Thai)
5. HDC-Dashboard. Standard report: feedback data for RDU Service Plan. 2017. (Accessed on Jun. 15, 2017, at https://hdcservice.moph.go.th/hdc/reports/page.php) (in Thai)
6. Yubonpunt P. The patients' perception of the quality of private hospital health services. *Acad Serv J* 2015; 26(3):94-105. (in Thai)
7. Brook RH, Ware JR JE, Davies-Avery A, et al. Overview of adult health status measures fielded in Rand's health insurance study. *Med Care* 1979;17(7 suppl):1-131.
8. Tonglearn K, Japakasetr S, Soonthornvivat J, et al. Patient perception in efficacy of treatment for upper respiratory infection and acute diarrhea in primary care unit, Chachoengsao Province. 2019. (In press) (in Thai)
9. Spinks A, Glaziou PP, Del Mar CB. Antibiotic for sore throat (review), *Cochrane Database of Systematic Reviews* 2013;11. (DOI: 10.1002/14651858.CD000023.pub4)

10. Panossian A, Wilkman G. Efficacy of *Andrographispaniculate* in upper respiratory tract infectious disease and the mechanism of action (Chapter 4). In: Evidence and rational based research on Chinese drugs 2012. (DOI 10.1007/978-3-7091-0442-2 4)
11. Thamlikitkul V, Dechatiwongse T, Theerapong S, et al. Efficacy of *Andrographis paniculate* Nees. for pharyngotonsilities in adults. *J Med Assoc Thai* 1991;74(10):437-442.
12. Sireeratawong S, Khonsung P, Nanna U, et al. Antidiarrheal activity and toxicity of Learng-pid-samud recipe. *Afr J Tradit Complement Altern Med* 2012;9(4):519-529.
13. Aonthong S. House hold remedies for acute diarrhea. Faculty of Traditional Thai Medicine, Prince of Songkhla University. 2012. (Accessed on Jun. 15, 2017, at http://www.ttmed.psu.ac.th/blog.php) (in Thai)
14. Chongtrakul P. Upper respiratory infection (URI): rational drug use in primary care. Bangkok. Wanida Print, 2016: pp.150-155. (in Thai)
15. Ministry of Public Health. Developmental guideline for five-star sub-district health promoting hospital 2018. Nonthaburi. Ministry of Public Health, 2018: pp. 18-19. (Accessed on Feb. 24, 2018, at http://team.sko.moph.go.th/content) (in Thai)
16. Manussathit S, Jongthavornsathit S, Theerawitayalerd R, Thuvanon P. Acute diarrhea in elderly: Guidelide for acute diarrhea in adult patients. Bangkok. Thailand Agriculture Cooperatives Publishing, 2013: pp.38-39.